Small Share of the Islamic Banks in Indonesia, Supply-side Problems?

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Abstract

About 21 years after establishment of the first Islamic banks in Indonesia, the share of Islamic banks is still small. About 86 percent Indonesian are Muslim, yet the asset share of Indonesian Islamic banks is only about 4 percent. Since Islamic scholars unanimously argue that bank interests are prohibited, we could expect that asset share of Islamic bank in Muslim-majority country is at least equal with Muslim share in the total population because all Muslims should choose Islamic banks over conventional banks. In this paper, we want to investigate what is the cause of small share of Islamic banks in Indonesia. To be more precise, whether it is caused by non-technical factor or it is caused by supply-side problems such as poor Islamic bank services or lower Islamic bank returns, or to be more extreme, it may be caused by people do not recognize Islamic banks. Using demand estimation model and elasticity exercises, we find that costumers appear to group separately Islamic and conventional banks, meaning that there is recognition and market segmentation. However, Islamic banks do not have greater market power compare to conventional banks. We argue that supply-side problems such as high services fee and low bank returns are not the reason why the market share of Islamic banks is so low. We also argue that non-technical factors such as the early-mover advantages and lack Muslim awareness may become the reasons. We also find that Islamic banks will not be able to effectively increase their market share by competing in price.

Keywords: *Islamic bank, small asset share, faith, supply side problem, partial equilibrium*

JEL Classification: *G02, G11, G21*

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I. Introduction

In the last decades, we witness rapid emergence of Islamic finance. Kassim (2010) finds that total market of Islamic securities grows about 15-20 percent annually and the market share of Islamic finance will increase further due to the rapid growth of Islamic banking and finance industry. Institutions trying to access funds through issuing Islamic securities/funds are also increasing. The International Organization for Securities Commission (IOSCO) reports that there were 100 Islamic equity funds worldwide with assets estimated around 3.3 billion USD in 2003 and their assets grew about 25 percent in the past seven years. Cakir and Raei (2007) find that sukuk (Islamic bonds) issuance was also increasing rapidly and globally, it grew around 45 percent in 2006.

The Islamic finance is growing faster in the Muslim-majority countries. Beck, Kunt, and Merrouche (2010) find that the market share of Islamic banks in Muslim-majority countries reached about 16 percent in 2005, increasing rapidly from only about 6 percent in 1994. This increase in the market share contributes significantly in increasing the market share of Islamic banks in global market which had reached 2 percent. Godlewski, Ariss, and Weill (2010) point out that sukuk Issuance in Indonesia, Malaysia, and the Gulf Cooperation Council (GCG) countries grew quickly from only 7.2 billion USD in 2004 to 39 billion USD in 2007 (43 percent of total global sukuk outstanding which was around 90 billion USD).

The rapid growth in Islamic finance in the Muslim-majority countries is still considered not sufficient to close the gap between conventional and Islamic finance, even in Islamic banking industry which is considered as the most advance industry in Islamic finance. For instance, in the two biggest Muslim countries in East Asia, Malaysia and Indonesia, the share of Islamic banks is

still very small after about 20 years from establishment of the first Islamic bank in those countries. Assets of Islamic banks in Malaysia, which 61 percent of its populations are Muslim and Islam is the state religion, are only 19 percent in 2011. The gloomier picture is in Indonesia. About 86 percent Indonesian are Muslim, yet the asset share of Indonesian Islamic banks is only about 4 percent. Since Islamic scholars unanimously argue that bank interests are prohibited, we could expect that asset share of Islamic bank in each Muslim country is at least equal with Muslim share in the total population because all Muslims should choose Islamic banks over conventional banks.

There are three possible reasons why market share of Islamic bank is small in Muslim-majority countries: Muslim has lack awareness about Islamic banks, infrastructure and quality of Islamic banks are significantly less than conventional bank, or conventional banks have non-technical advantages compared with Islamic banks. As the result, the advantage of the Islamic bank which is its wider demands because it could meet both demands for Islamic and conventional banking services will never been observed.

Surprisingly, very few quantitative studies have been conducted to investigate whether Islamic banks have "abnormal" market power (such as greater market demand) from their *religious* customers, their unconditional loyal clients and also to investigate what the reason for small market share of Islamic banks. One of these rare studies is study conducted by Weill (2010). He compares market power of Islamic banks and conventional banks in the 17 countries over the period 2000-2007 to investigate whether Islamic banks have greater power because they have unique "religious" clients. He finds no significant different on market power between Islamic and conventional banks. Surprisingly when controlling other variables, he finds that market power of Islamic banks was weaker than conventional banks due to the differences in norms and

incentives applied across the bank's type. Therefore, it is not surprising if Islamic bank could not close the gap with conventional banks.

To enrich quantitative studies regarding market power of Islamic institution especially Islamic bank, in this paper, we want to investigate what is the cause of small share of Islamic banks in Indonesia. To be more precise, whether it is caused by non-technical factor or it is caused by supply-side problems such as poor Islamic bank services or lower Islamic bank returns or, to be more extreme, it may caused by people do not recognize Islamic banks. In this paper, we also want to know whether Islamic banks have greater market power.

Using demand estimation model and Indonesian banking data, we test whether costumers in Indonesia differentiate between sharia and conventional banks. Then, we will investigate whether Islamic banks have greater market power and see whether pricing factors affect small market share of Islamic banks. We also test whether competing in services such as reducing fees and increasing returns could effectively improve market share of Islamic banks.

We find that costumers appear to group separately Islamic and conventional banks, meaning that there is recognition and market segmentation. However, the Islamic banks do not have greater market power compare to conventional banks. We argue that supply-side problems such as high services fee and low bank returns are not the root of low market share of Islamic banks, therefore non-technical factors such as early-mover advantages and lack Muslim awareness may become the reason why Islamic bank's market share is so small in Indonesia. We also argue that Islamic banks could not effectively increase their market share by competing in price.

II. Islamic Banks in Indonesia

The development of Islamic bank in Indonesia follows the dual banking system which allows both conventional and Islamic bank to be present in the banking system. People are free to choose any bank according their preferences. As Muslim-majority countries, we could expect that most people will choose Islamic banks over conventional banks in the dual system and Islamic bank gradually become the leading bank.

The first Islamic bank in Indonesia is Bank Muamalat Indonesia (BMI). BMI was initiated by National Sharia Board (Majelis Ulama Indonesia/MUI). BMI officially began its operation on May 1992. The uniqueness of development banks of Islamic in Indonesia is bottom up process. The initiatives come from people, not from government. In other Muslim- majority countries, the process mostly is top down which government has the first initiative to establish Islamic banks. Until currently, MUI is still actively involved in development of Islamic finance in Indonesia, particularly MUI and its National Syariah Board (DSN-MUI) have responsibility to supervise the sharia compliance of Islamic financial institutions.

The law number 10 year 1998 regarding the banking set another milestone for the development of Islamic banking. Conventional banks are allowed to provide services based on the sharia principles through the establishment of sharia business unit (Unit Usaha Syariah/UUS). This policy significantly improves the infrastructure of Islamic banking since the shariah business unit could utilize their parent's infrastructure, such us branch offices and teller machines. Since April 2007, the Bank Indonesia has permitted the sharia business unit to operate outside its parent branches.

The next milestone in the development of Islamic banking in Indonesia is the issuance of the law number 21 year 2008 regarding the Islamic bank. This law is the first law regulating exclusively Islamic bank. This law encourages conventional banks to spin off their sharia business unit to strengthen the line between Islamic and conventional banks.

There are three types of Islamic banking activities in Indonesia: Islamic bank, commercial bank's sharia business unit, and people credit sharia bank (BPR Syariah). Table 1 summarizes development of all types of Islamic bank in Indonesia.

Table 1

Islamic Bank by Type 2007-2012

Type of Bank	2007	2008	2009	2010	2011	2012
General Sharia Bank						
- Number	3	5	6	11	11	11
- Number of branch	401	581	711	1215	1401	1745
Sharia Business Unit						
- Number	26	27	25	23	24	24
- Number of branch	196	241	287	262	336	517
People's Credit Sharia Bank						
- Number	114	131	138	150	155	158
- Number of branch	185	202	225	286	364	401

Source: Bank Indonesia

Almost every year, the Islamic bank grows faster than conventional bank. However, the growths are not sufficiently high to be able to closing the gap between Islamic and conventional banks. Indonesia currently has 11 Islamic banks and 23 sharia business units, significantly less than the number of conventional banks of 109. Asset share of Islamic banks and sharia business units is only about 4 percent of conventional bank's asset.

III. Data and Methodology

We collect banks' annual financial reports 2008-2011 from the Bank Indonesia. Our sample covers all Islamic banks and 34 conventional banks or about 30% of population of conventional banks. Those conventional are randomly chosen. Our purpose not including all conventional banks is to balance data from Islamic banks and data from conventional banks since the number of Islamic bank is only 11 banks.

Our approach is to estimate demand on deposit for both Islamic and conventional banks, then we test whether costumers differentiate Islamic and conventional banks. We also estimate a market share to price elasticity both for Islamic and conventional bank to know whether pricing policy (lowering service charges or increasing deposit returns) could effectively increase market share of Islamic bank.

We follow Berry (1994) and Dick (2008) in modeling demand for bank deposits. The demand is modeled as a discrete choice. We assume that the utility function is a linear form such that the conditional indirect utility of consumer *i* from choosing bank's *j* services in market *k* is:

$$u_{ijk} = \delta_{jk} + \epsilon_{ijk} = P_{jk}^{d}\alpha^{d} - P_{jk}^{s}\alpha^{s} + x_{jk}\beta + \varepsilon_{j} + \epsilon_{ijk} \quad (1)$$

Where P_{jk}^{d} represent interest rates/returns paid by bank, P_{jk}^{s} represents service charges on bank services, x_{jk} represents observed characteristic, ε_j represents unobserved bank characteristics, and ϵ_{ijk} is a mean zero random disturbance.

Assuming that distribution of ϵ_{ijk} follows exp(-exp(-ϵ_{ijk})), market share for bank *j* could be derived based on probability that consumer *i* will choose bank *j* conditional on bank

characteristics. Market share of bank j could be predicted by $s_j = \frac{\exp(\delta_j)}{\sum_{l=0}^{J} \exp(\delta_l)}$. Therefore, predicted market share only depends on mean utility level, δ. As in Berry (1994), by setting the predicted market shares equal to observed market shares and normalizing the mean utility of the outside good, we could obtain:

$$\ln(s_j) - \ln(s_o) = P_j^d \alpha^d - P_j^s \alpha^s + x_j \beta + \varepsilon_j \qquad (2)$$

which s_o represents market share of outside good. We could estimate parameter in equation (2) using ordinary linear regression, as well as handling possible endogeniety on price using standard linear instrumental variables method.

To investigate whether consumers differentiate between Islamic and conventional banks, we use nested logit model as well as to reduce restriction regarding no correlation of consumer preference within bank categories (detailed online for this model, see Berry, 1994). Under nested logit model, equation (2) becomes:

$$\ln(s_j) - \ln(s_o) = P_j^d \alpha^d - P_j^s \alpha^s + x_j \beta + \sigma \ln(s_{j/g}) + \varepsilon_j \qquad (3)$$

Where $s_{j/g}$ represent market share of bank *j*, which belong to group *g*, as the fraction of the total group g share. Particularly, we are interested in σ. If it is statistically significant, customers differentiate between Islamic and conventional banks. In this regression, we also use instrumental variables method to handle possible endogeniety problem.

IV. Discussion

Table 2 shows the descriptive statistic of variables. The average Islamic banks' services fees and profit-sharing returns are 2.4 percent and 4.4 percent respectively. Both are less than the average

conventional banks' service fees of 5.2 percent and interest rate of 6.5 percent, meaning that Islamic banks' service fees are more favorable but Islamic banks' returns are less favorable. It also means that the Islamic banks still have room to improve efficiency in credits management since their deposit returns are much less than conventional banks deposit interest rates.

As expected, data shows that number of sample is decreasing on bank size. We have 30 small banks, 12 medium banks, and 3 big banks in our sample.[1] According to their owners, our sample includes 22 domestic banks, 15 state-owned banks, and 8 foreign banks.[2]

Table 4 presents our regression results. Columns 1 and 2 provide results of logit model regression. The coefficient signs are as we predicted, negative on service fee and positive on deposit interest rate/profit-sharing returns. However, only service fee is statistically significant, meaning that consumers consider service fees and less consider interest rate/returns in determining where they place their deposits.

We are also interested in the sharia variable. Sharia is dummy variables which takes value of 1 if bank is Islamic bank, otherwise take value of 0. Coefficient for sharia is positive but statistically not significant, meaning that Islamic banks do not have greater market demands compared with conventional banks.

Table 4 columns 3 and 4 provide results of the nested-logit model. The nested-logit model has greater flexibility than the logit model because it allows interactions between product and

[1] Definition of small, medium, and big bank are banks which have assets less than Rp. 2 trillion, banks which have assets between Rp. 2 trillion and Rp. 100 trillion, and banks which have assets more than Rp. 100 trillion respectively.

[2] Definition of each variable is provided in table 3 in appendix.

costumer characteristics while keeping the model fairly simple. As discussed in Berry (1994) and Dick (2008), consistent estimation of the σ parameter will not require additional instruments for the within-market of given bank share ($s_{j/g}$) to tackle its likely endogenous process.

The results in the nested-logit model are similar to logit model which is statistically significant in the services fee and not statistically significant in the interest rates or the profit-sharing returns. Coefficient for sharia is also positive but statistically not significant, meaning that the Islamic banks do not have greater market demands.

The σ parameters in two models are statistically significant, meaning that markets appear to group differentially Islamic and conventional banks. In other word, there is market segmentation in Indonesian banking market. The σ parameter is correlation parameter and it is precisely estimated, with a value between 0.2 to 0.3, indicating the nested strategy is appropriate.

Overall, there is still market segmentation but this segmentation does not create the greater market power for the Islamic banks to be able to close the gap with the conventional banks. The Islamic banks' small market share in Indonesia is also not caused by price factors. Our regression shows, regarding price factor, only service fees statistically affect the bank's market share. As mentioned earlier, the average of the Islamic bank's service fees is much less than the conventional bank's service fee.

We argue that the Islamic bank's small market share in Indonesia is not caused by supply side problem, such as price factor as we have explained above. This may be caused by non-technical factor. One possible non-technical factor is the early-mover advantages as the conventional banks entering the bank market much earlier than the Islamic banks. Berger and Dick (2007) argue that there is earlier-mover advantage in banking market, meaning that banks which move

earlier will have greater market share than the later entrances. Another possible reason is lack Muslim awareness as they still prefer conventional banks when Islamic banks are available and also competitive.

Table 5 provides price elasticity for each bank category in various percentiles (10^{th}, 25^{th}, 50^{th}, 75^{th}, and 90^{th} percentiles) to help interpretation of the coefficient magnitudes.[3] The median elasticity of service fee are negative and about the same under the logit model and the nested-logit model. The median elasticity of service fee for Islamic bank and conventional bank are about -0.05 and about -0.04 respectively, meaning that 1 percent decrease in bank's service fees will lead to 0.05 percent increase in Islamic bank's market share or 0.04 percent increase in conventional bank's market share.

The median elasticity of interest rates/profit-sharing returns for the Islamic bank is 1.5 (1.1 in the nested-logit model) and for the conventional bank is 2.2 (1.5 in the nested-logit model), meaning that 1 percent increase in profit-sharing returns or interest rates will lead to 1.5 percent increase in the Islamic bank's market share or 2.2 percent increase in the conventional bank's market share.

This elasticity exercise shows that the Islamic banks should prefer competing in service fee rather than competing in returns since their service fee elasticity is greater than conventional banks. However, the room for additional service fee reduction is limited because the average Islamic bank's service fee is already low and much less than conventional banks. The room for

[3] We calculate own price elasticities by $\in_j = \alpha p_j(1 - S_j)$ under logit model, while own price elasticities under nested logit model by $\in_j = \alpha p_j \frac{1}{(1-\sigma)}[1 - \sigma s_{j/g} - (1 - \sigma)S_j]$. For detail derivation of elasticities, see Berry (1994).

efficiency improvement is still available in the lending since the average of profit-sharing returns is much less than interest rate in conventional banks. However, the Islamic banks should not be dragged into interest rate "war" with the conventional banks since the magnitude of interest rate elasticity is higher than profit-sharing return elasticity. Overall, competing in the price is unfavorable for the Islamic banks because the difference in service fee elasticity between Islamic and conventional banks is much less than the difference between profit-sharing return elasticity and interest rate elasticity. This result is as we expected since Islamic banks have the "religious" clients, more loyal customers, who select banks not only base on prices.

V. Conclusion

Using Indonesian banking data from 1998 to 2011, we estimate demand for deposits both under logit model and nested-logit model, then we perform elasticity exercise for Islamic and conventional banks.

We find that the average of the Islamic bank's service fees and profit-sharing returns are lower than the average of the conventional bank's service fees and interest rates. We also find that costumers appear to group separately Islamic and conventional banks, meaning that there is recognition and market segmentation. However, Islamic banks do not have greater market power compare to conventional banks. We argue that supply-side problems such as high services fee and low bank returns are not the root of the low market share of Islamic banks. We argue that the non-technical factors such as early-mover advantages and lack Muslim awareness may become the reason why Islamic bank's market share is so small in Indonesia.

Our elasticity exercises show that the Islamic banks should prefer competing in the service fees rather than competing in the returns since their elasticity is greater than conventional bank's elasticity. However, the Islamic banks may not be able to effectively increase their market share by competing in price because the difference in service fee elasticity between Islamic and conventional banks is much less than the difference between profit-sharing return elasticity and interest rate elasticity.

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Appendix

Table 2
Summary Statistic

Variables	Mean	Std. deviation	Min	Max
Market share based on asset	0.026	0.067	0.00013	0.407
Market share	0.026	0.047	0	0.234
Market share per group	0.051	0.119	0.000007	0.722
Outside good share	0.026	0.047	0	0.234
Services fee	0.047	0.176	0.001	1.601
Interest rate or returns	0.061	0.026	0.009	0.182
Wages rates	0.045	0.086	0.006	0.834
Provisions/Loans	0.033	0.061	0	0.618
Liabilities/Assets	0.823	0.160	0.041	1.069
Fix Assets/ Assets	0.017	0.026	0.0002	0.179
Interconnection	0.175	0.727	0.0001	9.014
Small (30 banks)	0.718	0.451	0	1
Medium (12 banks)	0.218	0.414	0	1
Big (3 banks)	0.064	0.246	0	1
Domestic (22 banks)	0.494	0.502	0	1
State-owned (15 banks)	0.340	0.475	0	1
Foreign (8 banks)	0.167	0.374	0	1

Table 3
Description of Variables

Variables	Description
Market share based on asset	Bank assets/total market assets
Market share	Bank customer deposits/total market deposits
Market share per group	Bank customer deposits/total market deposits of Islamic banks or conventional banks
Outside good share	Deposits from other banks/total market deposits to other banks
Services fee	Non-interest operational revenues/customer deposits
Interest rate or returns	Interest expenses or profit-sharing expenses/costumer deposits
Wages rates	Human resources expenses/(0.5*loans+0.5*customer deposits)
Provisions/Loans	Credit provisions/loans
Interconnection	Deposit to other banks/loans
Small	Banks which have assets less than Rp. 2 trillion. There are 30 small banks in our observations.
Medium	Banks which have assets between Rp. 2 trillion and Rp. 100 trillion. There are 12 medium banks in our observations.
Big	Banks which have assets more than Rp. 100 trillion. There are 3 big banks in our observations.
Domestic	Majority share holders are Indonesians. There are 22 domestic private banks in our observations.
State-owned	Majority shareholders are Indonesian governments, both central and/or local governments. There are 15 state-owned banks in our observations.
Foreign	Majority shareholders are foreigners. There are 8 foreign banks in our observations.

Table 4

Regression Result

Explanatory Variables	1	2	3	4
Services fee	-3.387 (1.579)**	-3.21 (1.559)**	-4.143 (1.551)***	-4.031 (1.474)***
Interest rate or returns	35.171 (23.888)	35.796 (24.173)	-31.387 (20.666)	-8.758 (24.42)
Sharia		1.032 (0.711)		0.639 (0.637)
Log market share per group			-0.302 (0.124)**	-0.271 (0.117)**
Constant	-1.201 (1.470)	-1.440 (1.59)	1.472 (1.02)	1.472046 (1.02)
Number of Observations	150	150	150	150

** significant at 10%, ** significant at 5%, *** significant at 1% significance level; Standard errors are in ().*

Table 5

First Stage Regression Result

Explanatory Variables	1	2
Wages rates	0.12 (0.196)	0.074 (0.033) ***
Provisions/Loans	0.055 (0.21)	0.041 (0.035)
Liabilities/Assets	-0.101 (0.12)	0.049 (0.02)**
Fix Assets/ Assets	-0.378 (0.509)	0.136 (0.085)
Interconnection	0.068 (0.018)***	0.003 (0.003)
Medium	-0.035 (0.035)	-0.01 (0.006)*
Big	-0.058 (0.055)	-0.01 (0.009)
State-owned	0.0122253 (0.03)	-0.007 (0.005)
Foreign	0.183 (0.04)***	-0.003 (0.007)
Constant	0.095 0.105	0.019 (0.018)
Number of Observations	156	156
R-squared	0.3	0.1

*Dependent variables in i and ii are services fee and interest rate/returns respectively; * significant at 10%, ** significant at 5%, *** significant at 1% significance level; Standard errors are in ().*

Table 6

Price Elasticity Percentile

Price	10%	25%	Median	75%	90%
Service Fees					
Sharia					
- Logit	-0.114	-0.066	-0.054	-0.037	-0.020
- Nested Logit	-0.107	-0.071	-0.052	-0.035	-0.018
Conventional					
- Logit	-0.231	-0.072	-0.042	-0.022	-0.015
- Nested Logit	-0.222	-0.071	-0.041	-0.021	-0.014
Interest Rates/Returns					
Sharia					
- Logit	1.055	1.256	1.528	1.733	2.105
- Nested Logit	0.724	0.869	1.102	1.307	1.451
Conventional					
- Logit	1.170	1.685	2.194	2.690	3.226
- Nested Logit	0.801	1.155	1.504	1.844	2.210

Under logit model, own price elasticities are $\in_j = \alpha p_j(1 - S_j)$, *while own price elasticities under nested logit model are* $\in_j = \alpha p_j \frac{1}{(1-\sigma)}[1 - \sigma s_{j/g} - (1 - \sigma)S_j]$. *For detail derivation of elasticities, see Berry (1994).*